11 May 2000

NOAA FRV ALBATROSS IV
Cruise No. AL 00-01 (Parts I-II)

Winter Bottom Trawl Survey

CRUISE PERIOD AND AREA

The cruise period was from 9 February - 1 March 2000. The cruise was conducted in two parts: Part I was during 9-18 February; Part II was during 23 February-1 March. The area of operations was from Cape Hatteras to Georges Bank. Station locations and cruise track are shown in Figure 1.

OBJECTIVES

The objectives of the cruise were to: (1) determine the winter distribution and relative abundance of fish and selected invertebrate species; (2) collect biological samples for studies of age and growth relationships, fecundity, maturity and food habits; (3) collect hydrographic and meteorological data; (4) collect samples of ichthyoplankton and zooplankton; and (5) make data and sample collections for cooperative researchers and programs; (6) conduct a hydroacoustic survey between bottom trawl stations.

METHODS

Operations and gear conformed with the Cruise Instructions for the winter bottom trawl survey dated 11 January 2000, ADDENDUM NUMBER 1 dated 7 February and ADDENDUM NUMBER 2 dated 23 February with the following exception: Part I departed two days later due to mechanical problems; Part II departed one day later and returned five days earlier than expected also due to mechanical problems.

A 30-minute tow was made at each station with a Northeast Fisheries Science Center (NEFSC) standardized 36 Yankee flat net that was rigged with a rubber disc covered chain sweep, 13 floats and 55 meter ground cables. NEFSC standardized polyvalent trawl doors were used. The trawl was fished at a scope of 4:1 in water depths between 18 and 27 meters (m), 3:1 in depths between 28 and

183 m, and 2.5:1 in depths greater than 184 m. During the survey, speed was primarily determined using DGPS instrumentation. Direction of the tow was generally toward the next station.

For each species, total weight was obtained using motion-compensated electronic scales and recorded to the nearest 0.1 kilogram (kg) on standard trawl logs. On a separate data sheet, sampled fish were assigned individual identification numbers, measured, weighed and further sampled for age and growth and food habits studies. Bony fish were measured to the nearest centimeter (cm) to the end of the central caudal ray; biological samples were collected concurrently with measuring operations. Sharks and skates were measured to the end of the caudal fin (total length). Disk width was measured for rays. Lobsters were measured in millimeters (mm) from the posterior edge of the eye socket to the end of the carapace; the presence or absence of a V-notch was also noted. Crabs were measured across the carapace (width (cm). Shell height was measured in (cm) for selected bivalves. Additional collections were obtained for various scientists. The remainder of the catch (miscellaneous invertebrates, shells, substrate, et cetera) was described by volume.

Surface temperatures were measured using the hull-mounted temperature sensor at a depth of three meters. Temperature and conductivity profiles were made using a conductivity, temperature, depth instrument (CTD). A bottom salinity sample was obtained twice each day to calibrate the CTD. Water samples were also taken for fluorometer calibrations.

Samples of fish eggs and larvae were collected at selected stations. Plankton sampling gear consisted of a 61 cm bongo frame fitted with 0.333 mm mesh nets. Digital flowmeters were suspended within the mouths of the bongo frame. The net was towed at 2.8-3.7 kilometers/hour (1.5-2.0 knots). A CTD was deployed at each plankton station.

Eastern standard time was maintained during the cruise.

RESULTS

One hundred thirty stations were occupied during the survey with 72 and 58 stations completed on parts one and two respectively. Bottom salinity samples were taken at 20 stations. NEFSC standardized plankton tows were made at 45 stations. Bottom temperatures were collected at 129 stations using the CTD system. Bottom water samples for CTD calibration were taken on 21 stations. All trawl and biological logs were hand processed at sea for immediate entry into the NEFSC data management system. Tables 1 and 2 list the major samples collected for various studies.

DISPOSITION OF SAMPLES AND DATA

Age and growth samples, food habits data and samples, maturity data, trawl catch data, and hydrographic data will be analyzed at the NEFSC Laboratory at Woods Hole, Massachusetts. The various collections were forwarded to the individuals listed in Table 2. Resulting data have been audited, edited and entered into the NEFSC trawl survey data base in 2000.

SCIENTIFIC PERSONNEL

National Marine Fisheries Service, NEFSC, Woods Hole, MA
John Galbraith, Chief Scientist, Part I, 9-18 February
John Burnett, Chief Scientist, Part II, 23 February-1 March
Wendy Gabriel, II
Charles Keith, I
Marie Kiladis, II
Paul Kostovick, I
William Kramer, I
Holly McBride, I
Nancy McHugh, II
Nina Shepherd, I
Katherine Sosebee, I, II
Mark Terceiro, I

National Marine Fisheries Service, NEFSC, Narragansett, RI
Stephen Brownell, I, II

National Marine Fisheries Service, NERO. Beaufort, NC
David Gloeckner, II

Eastern Nazarene College, Quincy, MA
Philip McClaren, II

Massachusetts Maritime Academy, Bourne, MA
Brandie Schieb, I

University of Rhode Island, GSO, Narragansett, RI
Kenneth Raposa, II

Contractor, ETI, Woods Hole, MA
Lance Garrison, II

Contractors, PTSI

John DePeresenaire, I	Egg Harbor, NJ
Christine Harvey, II	Bristol,ME
Leticia Hopper, I	Damariscotta, ME
Walter Quinn, II	Brewster, MA
Thomas Reedy, I	Ventnor, NJ
John Wagner, II	Hampton Beach, NH

Scientific Personnel, continued:

Volunteers

Christopher Newhall, II	Scituate, MA
Nicole Wallace, I	Chattanooga, TN

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For further information contact: Thomas Azarovitz, National Marine Fisheries Service, Northeast Fisheries Science Center, Woods Hole, Massachusetts 02543-1097. Telephone (508) 495-2283; FAX (508) 495-2258; Internet Tom.Azarovitz@noaa.gov.

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Table 1. Field observations and samples collected for feeding ecology, and age and growth studies on FRV ALBATROSS IV Cruise 00-01 (I-II), Winter Bottom Trawl Survey, during 9 February - 1 March 2000.

Species	Feeding Ecology Observations	Age & Growth Samples
Alewife	3	-
American plaice	4	-
American shad	14	-
Atlantic cod	6	3
Atlantic herring	76	134
Atlantic mackerel	51	87
Black sea bass	82	329
Blueback herring	8	-
Bluefish	3	1
Buckler dory	1	-
Butterfish	90	-
Fawn cuskeel	40	-
Fourspot flounder	317	-
Goosefish	287	411
Haddock	-	1
Little skate	215	-
Ocean pout	132	-
Offshore hake	4	20
Pollock	2	-
Red hake	79	-
Rosette skate	52	-
Scup	70	155
Silver hake	149	2
Smooth dogfish	85	-
Spiny dogfish	512	-
Spotted hake	201	-
Striped bass	1	-
Summer flounder	436	108
Weakfish	13	-
White hake	15	121
Windowpane	119	266
Winter flounder	50	106
Winter skate	84	-
Witch flounder	-	271
Yellowtail flounder	61	365
TOTALS	3,262	2,380

Table 2. Miscellaneous scientific collections made on FRV ALBATROSS IV Cruise 00-01 (I-II), Winter Bottom Trawl Survey, during 9 February - 1 March 2000.

Investigator & Affiliation	Samples Saved	Approximate Number
Aquarium, NMFS, NEFSC Woods Hole, MA	Various live species Atl. herring	3 indiv. 2k
Thomas Azarovitz, NMFS, NEFSC, Woods Hole, MA	Loggerhead turtle	1 indiv.
Maronda Brown, UCONN Storrs, CT	Scallops	69 indiv.
Stephen Clark, NMFS, NEFSC, Woods Hole, MA	Shrimp	2 samples
Kevin Friedland, NMFS, NEFSC, Amherst, MA	Tagged Atl. sturgeon Fin clip	1 indiv. 1 sample
John Galbraith, NMFS, NEFSC, Woods Hole, MA	Unidentified species	53 indiv.
Lisa Hendrickson, NMFS NEFSC, Woods Hole, MA	Illex	1 box
Cheryl Milliken, NMFS, NEFSC, Woods Hole, MA	Cancer crabs	34 samples
Jon Moore, NMFS Woods Hole, MA	Deepwater species	22 indiv.
Anne Richards, NMFS NEFSC, Woods Hole, MA	Goosefish	100+ samples
Rodney Rountree, UMASS Amherst, MA	Misc. species	8 indiv.
Katherine Sosebee, NMFS, NEFSC, Woods Hole, MA	Female spiny dogfish/ pups Barndoor skates Various other skates	510 exam. 72 67 indiv. 928 indiv.
Douglas Stoner, South Carolina Division of Natural Resources	Barndoor skate fin clips	67 samples

Table 2. (continued)

Investigator & Affiliation	Samples Saved	Approximate Number
Michael Vecchione, NMFS, NEFSC, Nat'l Systematics Lab, Washington, DC	Various cephalopods	56 indiv.
Sara Wetmore, NMFS, NEFSC, Woods Hole, MA	Misc. species	1 indiv.